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ABSTRACT

According to a review of current reading research, components of language experience, whole language, and computer-assisted instruction need to be incorporated into the core basal reading program to make reading meaningful and enjoyable for all students. The basal reading approach continues to be used by the majority of teachers in elementary schools. Research indicates that students in classes which have incorporated various components of other approaches into basal reader programs scored much higher in achievement than students in schools having only the basal reader. The Language Experience Approach recognizes oral language, speaking, thinking, listening, writing and reading, and what students think and say they can write and read in meaningful ways. The Language Experience Approach is effective for reading disabled students and promotes a good self-concept within students. It is successful as a remedial technique in the upper grades. Whole language is based on the total language experience of the child. Many kinds of printed materials are utilized to integrate oral and written language. Student use of computers in elementary school involves drill-and-practice, tutorial, computer-assisted instruction, discovery learning, and word processing. The most important values the computer can add are immediate feedback, attentional focus, diagnosis, and a wide variety of laboratory or discovery environments. Children learn to read and write with computer assistance, and results compare favorably and sometimes above average with other reading methods. (Contains 147 references.) (RS)

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Three Approaches to Teaching Reading: Basal, Language Experience, and Computer-Assisted Instruction

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Three Approaches to Teaching Reading:
Basal, Language Experience, and
Computer-Assisted Instruction

Every fall thousands of children in each state enter the first grade. If the first grade teacher were to ask the students why they were coming to school, many of them would reply that they were coming to learn to read. By the time children are about six years of age, most of them are eager to read. This eagerness stems from the culture as well as from maturity. Of course, some come to school able to read after a fashion and eager to show that they can. Others are eager to show that they want to try (Stauffer, 1980). Several of them, from the beginning, recognize that being able to read well is important. The academic careers of all students will depend upon how well they learn this complex process.

Reading instruction is the major job of the school. School success or failure can often be traced to reading. It has been estimated that 75 percent of what a student learns in high school is learned through reading (Fay, 1956). Every school subject depends heavily upon it. When a school improves its reading program, improvement can be seen in the various subjects being taught in that school. Many high school students become dropouts because of inability to read on a level in keeping with the demands of the subjects in which they are enrolled (Aaron, 1961).

Reading is a basic life skill and becomes the cornerstone for a child's success in school and throughout life. Without the ability to read well, opportunities for personal fulfillment and job success inevitably will be lost.

Society and individuals place importance on reading. In the schools and classrooms across the country, reading is an essential tool for success (Anderson, Hiebert, Scott, & Wilkinson, 1985). Not being able to read textbooks, do research in the library, or read the teacher's notes on the blackboard directly affects the quality and amount of a student's learning.

Adult readers often forget how difficult it might have been to learn to read and take for granted the many times that reading ability is used. Reading touches all aspects of life and, to a large extent, influences one's lifestyle. How well one reads is a key factor in determining employment opportunities. This is recognized by legislators who are deeply concerned with literacy issues. Adult literacy classes aid people in becoming more self-sufficient, thus easing both the political and human issues such as unemployment and welfare costs. Additionally, reading can help solve depression and boredom (Leu & Kinzer, 1987).

Reading is a very complex process. It involves an intermingling of at least the following elements: people (reader, writer), language, and printed matter. It is defined simply as "getting information from the printed page" or "communication between an author and a reader" (Smith & Johnson, 1980, p. 201). A few decades ago, Leonard Bloomfield (1942), a noted American linguist, referred to reading as the greatest intellectual feat of anyone's lifetime.

Reading is important for society as well as for the individual. Economic research has established that schooling is an investment which forms human capital; that is, knowledge, skill, and problem-solving ability have enduring value. While a country receives a good return on investment in education at all levels from nursery school and kindergarten through college, the research reveals that the returns are highest from the early

years of schooling when children are first learning to read (Psacharopoulos, 1981). The Commission on Excellence (1983) warned of the risk for America from shortcomings in secondary education. The early years set the stage for later learning. Without the ability to read, excellence in high school and beyond is unattainable (Chall, 1983).

As our knowledge of the reading process has evolved, definitions of reading have become more complex. Although "getting meaning from print" is one way to define reading, such simplified definitions do not adequately present the complexity of the process, nor do they reflect the interaction of factors which enter into the reading act. Rudolf Flesch (1981) relates reading to a set of mechanical skills. In his view, "Learning to read is like learning to drive a car...the child learns the mechanics of reading; and, when he's through, he can read" (p. 3). "Teach the child phonics letter-by-letter and sound-by-sound until he knows it; and, when he knows it, he knows how to read" (Flesch, 1955, p. 121).

Dechant (1982) feels that reading is more complex:

> Reading cannot occur unless the pupil can identify and recognize the printed symbol, and generally the pupil must also give the visual configuration a name. Meaning is an absolute prerequisite in reading. Perhaps too much emphasis in reading instruction has been placed on word identification and not enough on comprehension. (p. 166)

Relating reading to a type of guessing game based on one's knowledge of language, Goodman (1976) noted:

> Reading is a psycholinguistic guessing game. It involves an interaction between thought and language. Efficient reading does not result from precise perception and identification of all elements but from skill in selecting the fewest, most productive cues necessary to produce guesses about meaning which are right the first time. (p. 498)

Rumelhart (1986) stated:

> Reading is the process of understanding written language. It begins with a flutter of patterns on the retina and ends when successful with a definite idea about the author's intended message,...a skilled reader must be able to make use of sensory, syntactic, semantic, and pragmatic information to accomplish his task. These various sources of information interact in many complex ways during the process of reading. (p. 722)

Leu and Kinzer (1987) stated that "Reading is a developmental, interactive, and global process involving learned skills. The process specifically incorporates an individual's linguistic knowledge and can be both positively and negatively influenced by nonlinguistic internal and external variables or factors" (p. 9).

All definitions of reading are personal, based on one's view of how one reads and how reading ability develops. Different teaching emphases will result from these different definitions of reading. Arriving at meaning is considered the goal of reading. Any definition of reading is only a guide and must change as the knowledge of the reading process grows. Reading is a complex skill requiring the coordination of a number of interrelated sources of information. Becoming a skilled reader is a matter of continuous practice, development, and refinement (Anderson et al., 1985). Learning to read ought to be a delightful, successful experience for children. Some students, however, find learning to read a difficult and frustrating task.

Reading serves a purpose. It is a means to pleasure in relaxation or entertainment as well as a means to pleasure through the learning of new ideas. Reading can be silent or, on occasion, oral (Stauffer, 1980). Being able to read does not make a person smart or productive, but being able to read makes it more possible for a person to function intelligently and effectively within modern society. This is the perspective which teachers of

reading most need to develop (Baird, 1987). The goal for teaching reading must be to produce readers, not readers just on grade level but lovers of reading and devourers of reading (Carbone, 1987).

Frank Smith (1978) contends that children learn to read by reading. The problem teachers face is finding materials suitable for beginning reading practice when children's sight vocabularies are extremely limited. The process of reading can only become enjoyable and successful when words become meaningful (Durkin, 1976). Of greatest importance is the fact that, in developed societies such as ours, literate people have a greater sense of their own worth than those who are not literate (Baird, 1987).

As the Commission on Reading states in its report, Becoming a Nation of Readers, "while there is more consensus about reading than in the past, there are still important issues about which reasonable people disagree" (Anderson et al., 1985, p. 4). This disagreement involves a number of imprtant topics associated with reading. Practitioners and researchers still argue about how beginning reading should be taught, about what students should read, and about how best to organize reading instruction in classrooms. Reading enthusiasts still make fervent claims for their approaches to a particular aspect of reading whether it be literary appreciation, intensive phonics, meaningful writing, whole language, or high-level thinking skills as "the answer" for teachers of reading. The lack of a body of agreed upon knowledge in the field of reading means not only that the arguments can last a long time but that various kinds of extravagant claims can continue to be made. This lack of a firm base of knowledge probably has a lot to do with the swings and fads for which the reading field is known (Winograd & Greenlee, 1986).

One of the most agreed upon conclusions of modern research about reading is the complexity of the reading process. This is described by Anderson et al. (1985) as follows:

> Based on what we now know, it is incorrect to suppose that there is a simple or single step which, if taken correctly, will immediately allow a child to read. Becoming a skilled reader is a journey that involves many steps. Similarly, it is unrealistic to anticipate that some one critical feature of instruction will be discovered which, if in place, will assure rapid progress in reading. Quality instruction involves many elements. Strengthening any one element yields small gains. For large gains, many elements must be in place. (p. 4)

Research in the area of reading has grown tremendously in the 1970s and 1980s. The number of research articles in the last fifteen years equals all of the published research in the past ninety years (Weintraub, Smith, Plessus, Roser, Hill, & Kibby, 1982). This research has confirmed some assumptions, provided new insights, and caused revision of theories and instructional suggestions.

Accountability (the need to prove that a program is effective) is often cited as among the strongest influences on reading instruction and sometimes as the strongest (Shannon, 1983, 1984; Winograd & Greenlee, 1986). Critics argue that current forms of accountability place too much credence on standardized test scores and that teachers are pressured to abandon balanced curricula to teach the skills which are to be tested. Reading instruction then comes to mean guided practice through a series of skills, and reading achievement comes to mean little more than scores on a standardized test (Linn, 1985).

Researchers have speculated that the competitive nature of reading instruction may produce able readers who only engage in reading for extrinsic rewards, such as grades, and who never develop a love of reading. Children are often placed in groups and compared to one another; and,

because the goals of reading instruction are often determined by test scores, children, educators, and the public come to view reading as a competitive activity. In many states the results of reading tests are already being published in the newspapers so that all can see which schools are doing well and which are doing poorly.

Researchers also argue that teachers have become "deskilled" in the sense that they no longer exercise their professional judgment in deciding what to teach, how to teach, or when it should be taught (Shannon, 1983, 1984; Shulman, 1983; Woodward, 1986). As Shannon (1983) put it, teachers "control only the level of precision with which they apply commercial materials" (p. 71). Some of the blame can be put on the use of commercial reading materials, the politics of social organizations, classroom management issues, and accountability. Teachers differ widely in their goals in reading instruction, and their intended practices in the classroom are fairly consistent with these goals (Calfee & Drum, 1979). Calfee and Drum (1979) suspect that, where a teacher is ineffective in helping students to achieve success, changing the teacher's goals will be an essential step in changing practices. They suggest the need for improved inservice and preservice teacher education to provide more coherent reading instruction.

Children are not spending enough time reading worthwhile materials, and teachers are not spending enough time helping children understand and appreciate what they are reading. Teachers are spending too much time "managing" children through materials by assigning them activities and asking questions and too little time engaged in the kind of teaching that will help children develop into independent readers (Winograd & Greenlee, 1986).

Judgments by curriculum directors and teachers are essential to a quality reading program. Teachers know more about the individual children in their classrooms than do the authors and publishers of reading programs. It is critical that teachers use their knowledge in selecting and adapting materials and lessons to fit the needs, strengths, and interests of students. Enthusiasm in teachers is essential to a quality reading program. Teachers should share their love of reading with children and should take time to read aloud and engage in sustained silent reading.

Elementary teachers are expected to teach children to read and to help them improve, refine, and apply their reading abilities. To do so, a teacher, school staff, or entire school district must decide on a sensible approach to teaching reading and, in so deciding, choose appropriate instructional materials. One of the major objectives of many schools is to help each student become an independent reader. Therefore, the teacher, the materials used, and the classroom organization used must help students learn and gain proficiency in applying basic skills to the reading of all types of materials.

People have a tendency to implement what they believe in and perceive to be effective. This study focuses on answering the questions: (1) What is the basal reader approach to teaching reading? (2) What is the language experience approach to teaching reading? (3) What is the computer-assisted approach to teaching reading? and (4) What are the advantages of each approach?

The Basal Reader Approach

The basal reader approach to teaching reading first began to develop with the introduction of the McGuffey readers in the 1830s. The McGuffey readers became the mainstay in American education. Between 1836 and

1890, 107 million copies of the McGuffey readers were sold, and their impact on American education was great (Hart, 1950). In the early 1900s, over 120 million copies were sold--outranked only by the Bible and Webster's Dictionary. For almost a century they were the main reading materials for over 80 percent of America's school children.

In the 1930s to 1960s, the McGuffey readers became regarded as out-of-date, and newer readers began to replace them. This era showed mostly a suburban setting. In the 1960s to 1970s, a new style in the basal reading series emerged. From the story setting, characters, and themes to the literary forms and subject matter area, each dimension of the reading series underwent dramatic transformation (Steddon & Stever, 1979).

The basal reader of today represents a publisher's attempt at the development of a preplanned, sequentially organized group of materials and methods for teaching developmental reading. Basal readers have traditionally followed the pattern of the McGuffey readers of the 1930s which featured controlled vocabulary, gradually increasing difficulty, and content aimed at being interesting to many (Peryon, 1981).

In the United States and in many other countries of the world, the basal is the basic, favored approach for teaching reading. Today the basal reader approach is used in the majority of elementary classrooms (Chall, 1983; Demos, 1987; Dowhover, 1989). George and Evelyn Spache (1977), in a survey of 1300 teachers, reported that 95 percent to 98 percent of teachers surveyed used the basal reader approach to teach reading. Eighty percent used basal readers every day. Their chief appeals are that they are sequential and teachers with limited backgrounds in the teaching of reading can use them easily and successfully for initial instruction (Baird, 1987). There is a nine-to-one chance that most adults were taught by means

of a basal reader. Currently, more than four out of five children are instructed through this approach (Chall, 1983). Formerly referred to as the "look-say" method, this approach is undergirded by a belief in a "controlled vocabulary" of high frequency words (Smith, 1980).

Shannon (1983) and Lorton, Millham, and Russavage (1985) suggest that teachers today feel administrative pressure to use the basal reader and its accompanying teacher's manual as a major component of their reading program. The result of this pressure (real or perceived) precludes innovative instructional decisions based on individual student need. Parents and the community also place pressure on teachers and the school to provide textbooks for their children to learn to read.

The basal reader approach involves utilization of a carefully graded series of books with controlled vocabularies and planned vocabulary repetitions. Most series try to address all phases of the reading program, including word recognition, vocabulary development, comprehension, oral and silent reading, and reading for information and recreation. The teachers' manuals give an array of suggestions and detailed plans for each story and include a sequence of skills (Dowhover, 1989).

Basals are written by reading specialists and published by selected commercial companies. Writers of basals choose sequential stories for pupils to read with teacher guidance (Ediger, 1983). The components of basal programs are: student reader, teacher's manual, student workbook, practice sheets, word cards, filmstrips, audio cassette tapes, and tests. The strengths include high structure, many approaches, scope, sequence, and stories not realistic (Demos, 1987).

In a recent survey, 25 teachers from grades one though five pointed to the following strengths in basal readers:

1. logical sequence of skills presented,
2. easily identifiable storylines,
3. variety of children's literature presented,
4. increasing difficulty of stories in terms of readability,
5. increasing difficulty of stories in terms of density of concepts,
6. controlled vocabulary,
7. convenience of having the same book for each child at a given reading level, and
8. presentation of comprehension and word analysis techniques. (Lorton, Millham, & Russavage, 1985, p. 315)

This list indicates that basal readers give teachers a sense of security and direction. It also suggests that not all teachers object to a teaching method which would seem to some people to be a lockstep method.

One of the most serious objections of educators to basal reading instruction is that it is a lockstep method. Most people realize that children grow at different rates, that readiness comes to them at different times, and that girls in elementary school are usually more mature than boys. Everything points to the fact that individualized instruction is the most effective type to use with beginning readers (Holmes, 1962). The basal reader, if it is used as directed by many teachers' manuals, requires the teacher to approach each lesson according to a specific sequence:

1. creating interest and establishing motivation
2. presentation and study of words new to the series
3. reading
   a. directed silent reading
   b. re-reading and oral reading

4. skills development and practice
5. follow-up (usually workbook or ditto pages) (Staiger, 1969)

If teachers are forced to approach each selection in this manner, the pace is slow and the interest level of bright students may lag. Also, slow students for whom this approach is too fast may fall behind.

Winograd and Greenlee (1986) emphasize the following features of basals:

1. their capacity to serve as an organizational framework for reading instruction, to unify;
2. convenience, saves time;
3. organized and sequenced materials;
4. coordination of student materials with teacher's manuals;
5. organized lessons;
6. teacher's manuals provide daily inservice training for teachers;
7. practical; and
8. up-to-date.

Winograd's (1986) thesis is "that basal reading programs are most effective when they are used flexibly and as part of a comprehensive, balanced program of reading instruction" (p. 271). Winograd asserts that basal reading programs are least effective when they are used as the total reading program and children spend all of their allocated instructional time in reading selections and completing the various exercises in the program. He proposes that a comprehensive, balanced program of reading instruction must contain more than the selections and exercises of a basal reading program.

The group of teachers cited previously identified weaknesses of basal readers. Their estimations concur with those of Demos (1987). Weaknesses were as follows:

1. story content is sometimes irrelevant to the reader's background,
2. story content is not matched to individual student's interest,
3. word analysis and comprehension skills are not fully developed,
4. too few opportunities are provided to apply word analysis and comprehension skills,
5. vocabulary is too controlled,
6. stories on current topics are insufficient, and
7. individual skill needs are not met.

Dolores Durkin (1987) faults teacher manuals for not offering enough guidance to teachers about how to acquaint students with vocabulary they will need in order to understand language and how it operates. Meaningful context is important in teaching vocabulary. Children need multiple exposures and rich semantic associations to learn the meanings of new words (McKeown, Beck, Omanson, & Perfetti, 1983; Stahl, 1983). Vocabulary words should be presented in many contexts, both oral and written, in order to increase the number of meaningful semantic associations the youngsters have with the words and to encourage their use of contextual clues.

Leu and Kinzer (1987) list the following reasons for the popularity of basal reading programs:

1. basal reading programs save time for teachers,
2. they include a comprehensive set of reading skills,

3. skills are organized hierarchically,
4. basal programs generally organize reading selections in terms of difficulty,
5. they provide for regular review of reading skills,
6. they provide opportunities for teachers to adapt the materials to the needs of individual students, and
7. basal reading programs provide explicit lesson plans for each day and therefore provide guidance to new teachers. (pp 360-362)

Burns and Roe (1976) list these four major strengths:

1. the books are carefully graded in difficulty and the vocabulary controlled,
2. the teacher's manuals have valuable suggestions which save time,
3. basal series deal with all phases of the reading program, and
4. there is systematic teaching of skills and review. (p. 251)

Basal readers have been attacked through the years for their irrelevance to the lives of students. Fred Busch (1970) writes:

> The bland, pollyannaish content found in most first grade reading texts not only stifles the growth process but more importantly may communicate to the child that this (the growth process) must be something to be frightened of and avoided. Why else would the characters not show emotion that is negative as well as positive, feel anxiety and pain, or experience conflicts? (p. 30)

The problem Busch addresses is a highly complex one, and it has not yet been overcome completely. The broadening of the vocabulary used and the improvement with regard to content are promising signs. Erick Erickson (1959) has written of children's need during the latency stage to find a

means of dealing with what is going on inside them. Their literary experiences could meet this need with the proper direction.

Goodman, Shannon, Freeman, and Murphy (1988) state that the main strength of basals is their tight organization and sequence. Everything is precise, direct, and goal-directed from the lesson organization to the controlled vocabulary to the complexly labeled questions which precede, accompany, and follow the reading of the stories and other texts. They appear to offer to schools and to teachers the complete programs they have promised. But their major strength is also their major weakness because the essential elements of the organization and sequence do not easily permit modification in any but superficial ways.

Goodman et al. (1988) feel that basals are built around control. They control reading; they control language; they control learners; they control teachers. This control becomes essential to the tight organization and sequence. Any relaxation of the control in any of these elements would appear to undermine the whole system. They stress that nowhere in the basals are learners encouraged to decide what is for themselves a good story or text. There is little choice, little self-control, little sense of ownership of their learning and their own reading. Thus it becomes bad for reading development, for their development as thinkers, as learners, and as participants in a democratic society.

Goodman et al. (1988) conclude that basals are not the best that modern business and science could offer our schools and that our classrooms need to be opened to alternatives. Producers, users, and the public must rethink the role and nature of the basal reader. Time must be taken for a broad scale reconsideration of the teaching of reading in schools.

The NCTE Commission on Reading in Report Card on Basal Readers (1988) made the following explicit recommendations about basals and their use which can be immediately implemented:

1. teachers should not be required to use any program they find professionally objectionable;
2. no adoption of any basal should exclude the possibility of teachers modifying its use or using alternate materials and methods;
3. publishers should immediately discontinue the practice of revising and censoring selections from children's literature;
4. publishers should change the way teachers are treated in teachers' manuals of basals. They should be addressed as professionals and be supported in their exercise of professional judgment;
5. school authorities should establish criteria for reading instructional materials and make no adoptions if materials offered do not meet their criteria;
6. in all aspects of development, selection, and use of basals and alternate methods and materials, the needs and welfare of students must be placed above all other considerations; and
7. school authorities, legislatures, foundations, professional organizations, and others should encourage innovation within and without basals through funding research and experimental programs in schools. (p. 153)

Briggs, Sampson, and White (1982) examined the strategies first grade students used when reading two types of materials: basal and

student-authored. Results showed that the basal story miscues at the sentence level were semantically and syntactically acceptable but were coupled with meaning change. The interrelatedness of syntax, semantics, and meaning change on the story level was ignored by students as a basis for correcting miscues to maintain meaning. On the other hand, student-dictated story miscues produced interrelationships which allowed little meaning change and no loss in comprehension. Although they were confronting a more sophisticated vocabulary and more complicated sentence structure, the students used more efficient strategies when reading the dictated stories.

Bergemann (1969) studied the effectiveness of a modified language experience approach versus a basal approach with first grade rural and urban children. She found no statistically significant differences between the modified language approach and the basal approach to reading instruction in grade one. In considering her conclusions, attention should also be given to the limited number of teachers, conditions which prevented random selection of teachers, and the fact that the population lacked pupils in the higher ability ranges.

Butterfield and Eldredge (1986) concluded that three experimental approaches to beginning reading were found to be more effective than the traditional basal approach. Statistical analyses of the effects of materials, grouping, and decoding on achievement and attitudes toward reading indicated that (1) the use of children's literature to teach children to read had a positive effect upon students' achievement and attitudes toward reading--much greater than the traditional methods used, (2) the use of the special decoding instruction also had a positive effect upon students' achievement and attitudes toward reading--much greater than traditional

decoding instruction; and (3) the use of heterogeneous grouping did affect achievement positively. Students not only made significantly higher achievement gains than students using basals, but their attitudes toward reading also improved significantly. Attitudes toward reading decreased among those children using basal readers during this same period of time.

Brown and Pollack (1980) investigated ways of establishing links between different methods of reading instruction, children's conceptualization of the reading process, and children's actual reading behavior. Subjects were selected from third grade students from three schools in Melbourne, Australia, which employed separate teaching methods: a decoding approach, a skills approach in a basal reader, and a language experience approach. Noticeable differences arose in children's retellings: children from the language based school tended toward slightly higher retelling scores despite lower scores in other areas, and able readers from the decoding school also had higher retelling scores. Interview results indicated that, except for a few children, most were unable to discuss fully their understanding of learning to read, levels of competence, or the pedagogy used.

Carr and Evans (1985) compared two groups of primary grade classrooms differing in their instructional approach to beginning reading to assess the relationship between learning activities, cognitive abilities, and reading skill. Students' activities in twenty classrooms were observed, confirming that half of the classrooms followed an individualized language experience approach and half a decoding-oriented basal reader approach. Year-end testing of the students revealed basic level reading skill to be less universally acquired in the language-experience group but no difference in information processing and linguistic abilities between the two groups. In

addition, while the various cognitive measures generally correlated positively with reading in the decoding-oriented group, significant negative correlation between linguistic ability and reading skill were observed in the language-experience group. It is argued that linguistic ability facilitates beginning reading only after a threshold of print-specific skills is acquired and that the observed difference between the two groups stemmed primarily from their varying emphases on systematic instruction, with corrective feedback, of these print-specific skills.

Baumann (1984), Bridge (1983), and Jones (1985) suggest linking or coordinating the basal reader and the language experience stories. This will liven-up a basal reader program (Baumann, 1984). Teachers need to make children aware of the different reading strategies available to them (Allen, 1983). They must deal with various approaches to reading instruction (Peryon, 1981).

The current state of affairs in American reading is not the fault of any one group. Publishers are not alone at fault. There is some truth that they are giving teachers and schools what they want. There is a vicious circle which can not be broken in any one place. Teachers, administrators, teacher educators, researchers, authors, editors and publishers, and the public all must share the blame and must accept responsibility for opening up reading education.

If the findings of Baird (1987), Chall (1983), Demos (1987), Dowhover (1989), and Spache (1977) are correct, then it seems likely that most school systems will continue to center their reading instruction around basal readers. Basal reading series can provide for the sequential development of all the reading skills. These materials should not be considered as the sole reading program. They are simply tools. Many other materials should be

used to supplement them. Studies (Asplund, 1976; McGuire, 1968; Streit, 1973; Sucher, 1968) have shown that students in schools which incorporated various components of other approaches into the basal reader programs scored much higher in achievement than students in schools having only the basal reader.

The Language Experience Approach

The history of the language experience approach began about the turn of the twentieth century. According to Hildreth (1965) there were several professionals exploring the experience approach to reading instruction. One of the earliest to try the method in the 1920s was Miss Flora J. Cooke of the Chicago Institute, now the Francis Parker School. Others included the Deweys at their experimental school and Dr. Maria Montessori.

The 1930s and 1940s saw the development of curriculum guides and related materials regarding the approach. Such items as the Teacher's Guide to Child Development, Curriculum Bulletin Number 95, The Primary Manual of the Cincinnati Public Schools, and the Iowa Elementary Teacher's Handbook all dealt with this approach (Hildreth, 1965). In Europe it was blended with the Methods Global of Decroly and the Montessori Method. During World War II it was utilized heavily due to the shortage of school texts. The method has been used extensively in Turkey, New Zealand, and Central and South America (Hildreth, 1965).

During the 1950s Roach Van Allen instituted the Language Experience Approach as a formal program. He was teaching in Texas on the Mexican border where he dealt with large numbers of students who had the problems often associated with non-native speakers of English. Allen realized that these students had reading problems because their life

experiences and language experiences had been quite unlike those of typical American students, the kinds of students at whom most textbooks were aimed at that time. Using the Language Experience Approach, which had been tried experimentally in the Laboratory School of the University of Chicago thirty years before, Allen found that his students made much greater progress than they had in the past.

When Allen moved from Harlington to the San Diego Public Schools as Director of Curriculum, he found that the children in this district had many of the problems he had noticed in his Texas students. Allen instituted a Language Experience Approach in the San Diego Elementary Schools, particularly in the first grade. He described and explained his rationale in the following way (Allen, 1961):

> What I can think about, I can say.
> What I can say, I can write or
> someone can write it for me.
> I can read what I have written or
> what someone else has written for me.
> I can read what others have written
> for me to read. (p. 158)

This brief statement contains the essence of the Language Experience Approach to reading instruction.

A Language Experience Approach in reading instruction recognizes in daily practice that the oral language background of each child is a basic ingredient in word recognition. The thinking of each child is valued, which leads to expressing his thinking in oral language which can be represented in written form which can be reconstructed (read) by the author which leads to reconstruction of other written language which should influence the thinking and oral language of the reader so that his spelling, writing, and reading improve (Van Allen, 1973). The Language Experience

Approach helps children become increasingly sensitive to their environment, integrates the various facets of language arts instruction in the curriculum, and provides non-English-speaking children with many opportunities to experience success at school.

This very old instructional approach, traditionally used with beginning readers but also employed in upper grades, is based on the rationale that what children think and say can be written down and then read back in order to learn to read. Children dictate stories (often called experience charts) to the teacher and then the teacher uses this text as a material of instruction (Dowhover, 1989). Language experience can be used successfully at all levels of early reading instruction because it is real to students.

The language experience approach to teaching reading is essentially what its name implies--an approach which capitalizes on students' experiences and, from them, draws the materials from which they will learn to read. It deals not with hypothetical people the way basal readers must but with the students themselves. Not only are the stories theirs but, more importantly, so are the words. The vocabulary level should present fewer problems than one sometimes encounters using basal readers because the vocabulary of the stories is the vocabulary of the children telling them (Baird, 1987).

To a first-grade teacher's ears, some children may sound like very bright and mature six-year-olds, while others have speech we have come to regard as "illiterate." Still others speak in the monosyllables and short phrases of a three-year-old's speech; some are just timid or overwhelmed by the new experience of school and do not like to speak at all. The teacher must regard each child's language as worthy and become accustomed to

the wide spread of language capacities and the many different levels of language development found in most classrooms (Van Allen, 1973).

All children come to school with a larger speaking vocabulary than reading vocabulary (Sood, 1981; Demos, 1987). They all bring with them language of some sort: their own personal language. It is all they have until they expand it or learn another language. The Language Experience Approach builds upon the children's language and helps the children to use language to develop their own stories. The philosophy of this approach is built upon the theory that children can think, children can speak, and children can read what they write. This approach builds upon the child's past experiences and allows the child to discuss topics of interest. Emphasis is placed upon the child's natural language and expression.

Demos (1987) lists some strengths and weaknesses of the Language Experience Approach. Strengths found in the language approach are as follows:

1. uses the child's natural language;
2. students learn from each other and share experiences;
3. integrates reading, writing, thinking, speaking, and listening; and
4. encourages creativity.

Weaknesses include:

1. not enough planned skill development activity,
2. children may become bored, and
3. more difficult to evaluate child's progress.

Teachers recognize the merit of using experience stories because children become personally involved with the text which is about firsthand experiences and written in their own words. Readers extend their sight

vocabularies considerably by reading their own dictated stories and may learn many words (Crosby, 1976; Ediger, 1983; Jones & Nessel, 1985; Larson, Pascarella, & Reifman, 1981).

Jeanette Veatch (1978) has identified the chief advantage of language experience: "Children speak and listen before they write. Therefore, the shortcut to reading is through their own speaking and listening" (p. 280). The authenticity of narratives recorded as children tell them and the appropriateness of these narratives to individual children's interests and vocabulary levels recommend language experiences beyond any other method of initial reading instruction.

Barbara Mallon and Robert Berglund (1984) claim that language experience "motivates students to want to read and effectively demonstrates the connection between spoken and written language" (p. 867). They also claim that "the use of a student's own language and background of experiences encourages acquisition of a reading vocabulary as well as a comprehension of the printed word" (p. 867). They have set up a sequential program which leads into language experience.

Elain Vilscek's (1968) research, conducted with first grade students, revealed that students taught by language experience in first grade had higher second grade scores overall than did those taught by other methods. It also revealed that these students had a greater range of scores. She found that students who came from advantaged home situations scored considerably higher than students who came from less favored circumstances.

According to Douglas E. Giles (1966), greater language gains are made by students in language experience during the first grade than by students who are taught reading by other means. Harry Hahn (1968) found

that students taught by language experience are superior to those who have been taught through the use of basal readers in spelling, word recognition, and paragraph comprehension. Gertrude Hildreth's (1964) research indicated that "words children use in their own speech are easier to read in print than words they do not use" (p. 280). she also found that "the richness of a child's language is related to reading success" (p. 297). Language experience adds to the richness of children's language because it encourages oral communication and it enhances children's images of themselves by letting them see that their stories are important enough to be written down and displayed. Another major advantage of the Language Experience Approach is that it engages the interests of the children with whom it is used because it invokes their own experiences and uses these experiences as the bases for stories. The dialect and the vocabulary used will generally be at a level appropriate to the group from which the dictated stories come.

In the early stages of language experience, teachers and paraprofessionals must do the writing. As time progresses, some students will be able to write their own stories; and, in time, these students can serve as scribes for their language experience groups. Some children learn to write before they learn to read or as they are learning to read. Research indicates that early writers are usually better readers than students who begin to write late (Chomsky, 1971; Cunningham, 1983; Moxley, 1982), so it is wise to offer young students every opportunity to write while they are learning to read. Such prewriting activities as coloring and drawing will often help students develop the small muscle coordination they will require for writing.

The Language Experience Approach, according to Baird (1987), is a gateway to reading in two essential ways. In the first place, it encourages students to read their own stories and, as they progress, stories their classmates and friends have told. They approach these stories with a feeling of involvement, excitement, and pride. Secondly, teachers will quickly come to know what their students' interests and enthusiasms are through listening to their stories, and this will enable them to work toward broadening their students' perspectives by reading or telling them stories which reflect their interests and by leading them to stories which will probably appeal to them.

Demos (1987) noted that flip charts, chalkboard, paper and pencil are the needed components. The strengths include using child's natural language; students learn from each other and share experiences; integrates reading, writing, thinking, speaking and listening; and encourages creativity. The main weaknesses are not enough planned skill development activity, children may become bored, and more difficult to evaluate child's progress.

Jones and Nessel (1985) suggest two ways to use experience stories in the regular curriculum: (1) integration with the basal, and (2) as the basic methodology in the content areas. Both uses give children the advantages of a highly personalized approach within the systematic units of a core program.

Sood (1981) found this approach a very effective teaching tool for reading disabled children since it attempts to relate reading and other communication skills (listening, speaking, and writing) in an instructional program. The fact that each child is encouraged to proceed at his pace is another major advantage of this approach. The oral and written

expressions of children serve as the primary reading material in this approach since reading is considered to be a by-product of thinking and oral expression.

Lane (1963), Hall (1977), and R. Stauffer (1966) reported that teachers who used the Language Experience Approach rated it positively for practicality and effectiveness. Several learning modes are incorporated throughout the approach, and use of this approach promotes a good self-concept within students. The Language Experience Approach has also been highly successful as a remedial technique in the upper grades. It allows a remedial reader to read interesting materials (Burns, 1976).

The first step to incorporate the Language Experience Approach into the lesson is to introduce a stimulus which should prompt discussion. The second step is for students to put their ideas into graphic form (Berglund, & Mallon, 1984; Carbone & Grey, 1987). Brainstorming prior to dictation, which is the third step, helps to bring out words and ideas which the student may use later in a group or individually dictated story (Berglund & Mallon, 1984). After these steps are followed, the students are ready for writing.

The writing process has three options. In the first option, the student dictates to the teacher who records exactly what is said into the student's book. In option two, the student dictates as the teacher writes on a sheet of paper and then the student recopies into his/her book. In the third option, the student writes directly into his/her book.

The most effective stories are those in which students talk about themselves and their experiences. The most fluent descriptive stories are results of real events (Berglund & Mallon, 1984). As a result of long standing criticism of the unnatural prose in basals, the Language

Experience Approach put its emphasis on matching the language of reading materials with the language of the child (Gourley, 1978).

Stauffer (1966) compared a language arts approach to beginning reading instruction with a basic reader approach with 528 subjects all at least five years, eight months of age. He concluded that the language arts approach is a most effective way of teaching reading. It produced excellent results in reading performance, in word attack skills, in spelling, in vocabulary development, in written communication as promoted by creative writing, and in handwriting. Furthermore, he concluded that the technique can be used effectively with all children and that all teachers can learn and use the language arts approach and use it effectively. At the end of Stauffer's study, teachers were highly enthusiastic about this approach and almost evangelistic about their convictions. Stauffer (1966) also felt that the effect of language experience activities on self concept is another factor to be considered because of the interest and pride shown by children after dictation.

Hall and Ramig (1980) discussed reading strategies of first grade children taught by a language experience approach and a basal reader approach. Twenty-one language experience taught subjects and twenty-one basal reader taught subjects read a 140 word story from a basal reader not used in the classrooms. A modified version of Goddman and Burke's miscue analysis procedures was used to examine use of graphophonic, syntactic, and semantic cues. Results showed no significant differences between these two groups in use of these cues. Twenty-five words, randomly chosen from the Harris-Jacobsen Core List, were presented one at a time to the subjects. No significant differences were found for number

correct, number of non-responses, number of real word substitutions, or number nonsense word substitutions.

Ruth and Gerald Freeman (1987) investigated approaches to reading acquisition used in four first grades of a suburban elementary school. Individual teacher interviews established the differences in program emphases. Group A used the basal reader program, Group B the basal reader and an additional phonics program, Group C the basal reader and the language experience approach, and Group D the language experience approach and a wide range of supplementary readers and trade books. All groups participated in supportive language arts activities. Nine randomly selected subjects from each class participated, three from each high, middle, and low reading groups. Informal reading inventories were individually administered and scored for levels of word recognition in context and reading comprehension. Results supported the use of the language experience approach as a viable alternative to the basal reader approach for teaching reading and writing. The study supports a whole language approach as an alternative for teaching reading and writing.

Homan, Johnson, Norman, and Vickers (1983) found that the Language Experience Approach is one of the few inexpensive approaches which incorporate both visual and auditory skills into reading. In the case study of Cohen (1976) implementing an integrated language experience approach in an elementary school produced improved reading and writing skills, children's positive attitudes toward program and school, and favorable teachers' attitudes. The main objectives were to teach reading through a Language Experience Approach, integrate reading and writing with the total curriculum, and change toward open, informal classrooms. A model classroom, the Activity Room, was established; and primary grade

children and teachers came to the room for a variety of activities. Findings indicated that children benefitted from the program in several ways: children's reading skills improved markedly; a much larger percentage of children were reading at or above grade level than in previous years, and second and third grades who participated in the Activity Room were writing syntactically more mature sentences than were the fourth grades who had not participated in the program. Sketches indicated that classrooms changed dramatically, mainly through the addition of interest centers, more materials for children, and more displays of children's work.

Asplund (1976) studied ten second grade students in a slow reading group to compare the effects of basal and language experience instruction on word recognition skills. For four weeks, all the students received ninety minutes of basal instruction each morning. During the afternoon sessions, the five language experience students dictated and read stories related to the theme of the basal lesson, while the five remaining students continued to use only the basal instructional materials. Both groups were pre- and post-tested on 180 words in isolation. The data showed that the language experience group achieved 10% greater sight vocabulary than the basal group. Only 20% of the basal group exceeded the combined mean gain in word recognition for both groups (20.8)., while 80% of the language experience group exceeded the mean. It appears that the language experience activities stimulated the children to use difficult words in the familiar, meaningful context of their own oral language, reinforcing the basal lessons. The language experience group also had the opportunity to interact with older partners (third grade students) during their afternoon sessions, an individualized approach to reading that resulted in more interest in reading.

Mallett (1977) reported on a study of Northern Indian Junior High School students (8th and 9th grades) who were functioning two or more grades below their grade level. His study was a six-week long project where the control group and the experimental group reversed roles at the end of six weeks. He reported there were no significant gains over the basal approach to reading versus the language experience approach, except in the area of attitude, which was significant at the .05 and .01 levels. He also indicated there were possible contaminants in the areas of testing and student resistance to testing. It would seem that the short duration of the study would also play a significant role in the academic results of utilizing the language experience approach.

Hall (1972) reported on several studies concerning the culturally disadvantaged. She indicated that Lamb, working with five first grade classes (with five control groups) found no significant difference between the groups. McCanne (Hall, 1972) studied Spanish Speaking children in Colorado where he reported higher gains with the basal approach. It should be noted, however, that he felt that there was a cultural deterrence to free discourse. There was no report as to the techniques used within the language experience approach. This is a common problem with the research studies reported. Few, if any, delineated how they used the language experience approach. Thus, in the positive reports by Hall (1972) there is still a lack of knowledge. Hall reported that Parker indicated he found a significant difference between the vocabulary development of the language experience group versus the basal reader group. She indicated that Meriam, with the Mexican-American students, found a significant improvement on reading tests--months in school versus months of achievement (no control group) (1972). She also indicated that Brazziel and

Terrell found that one class of twenty-six students did significantly better when they used an approach which included the language experience approach. Hall also found in her own study with first grade Black children in the Washington, D.C., area that there was a significant gain in the areas of reading readiness, word recognition on standardized word recognition tests, and standardized sentence recognition but that there were no significantly different scores in the area of word recognition with the researcher's own measure of word recognition.

All areas of research with the socio-economically disadvantaged have indicated that there is a confusion as to results and as to how to interpret those results. Only the area of self-esteem seemed to be consistent in all studies which reported on this area. All studies indicated that there was an increase in attitudinal changes when the student used the language experience approach.

Whole language is an approach to teaching reading based on the total language experience of the child and has been used extensively in New Zealand, Australia, and Canada for many years. It is based on the premise that children learn language by using it, writing it, thinking it, and reading it. There is no isolation of words when using language in a natural way. It integrates both oral and written language and becomes whole word language experience, or eclectic. When one visits a functioning whole language classroom, the observer will immediately notice print: printed messages about activities for the day; printed examples of child-written work; printed wall charts; big books; printed labels on equipment, shelves, cupboard, and so on to give information about the contents and use.

With whole language, nothing is done in isolation. Reading materials relate to science, social studies, and even math topics and

integrate the language processes with conceptual learning. Groups of children work together in both interest groups and skill groups. Desks or tables are arranged for group discussions. Students are reading books aloud and sharing ideas, helping each other with skills, recording stories on tape, and rehearsing plays--often simultaneously. Spelling is taught in the context as the students need it. It develops just as reading and oral language develop, and phonics instruction takes place in the whole language approach to learning to read which bolsters spelling skills (Anderson, 1984).

Whole language classrooms contain books, magazines, newspapers, directories, signs, packages, labels, posters, and every other kind of appropriate print. Basal readers, sequenced skill programs, workbooks, skill exercises, and the usual types of instructional materials aren't needed. Many recreational books are used, fiction and non-fiction, with a wide range of difficulty and interest; and resource materials such as dictionaries, encyclopedias, phone books, TV guides, and adult reference books are utilized. Whole language is an attempt to get back to basics in the real sense of the word: to set aside basals, workbooks, and tests and to return to inviting children to learn to read and write by reading and writing real stuff (Goodman, 1986). In whole language, teachers become kid-watchers. The teacher is continually observing to better understand a child's reading behavior. Whole language integrates oral and written language, and it integrates development in both with learning across the curriculum (Goodman, 1986).

Computer-Assisted Instruction

The years 1972 to 1976 marked the hobby computer stage. During those years engineering-minded individuals assembled their own

microcomputers from parts sold in kits. One of the most popular was the MTTS Altair 8800. During this period other companies were competing with Intel for their share of the microprocessor market. Among them were Texas Instruments, Fairchild, Rockwell, National Semiconductor, Motorola, and Zilog. Also during this period, Steven Jobs and Stephen Wozniak, both hobby computer builders, formed a microcomputer company that was to be known as Apple Computer (Baker, 1982).

> Commodore Business Machines was the first company to announce full-assembled personal computers in 1976. Commodore's Personal Electronic Transactor (PET) micros were ready for marketing in October 1977. In 1977 Apple computer was producing its personal computers. Joining these two companies was the Tandy Corporation, maker of the Radio Shack TRS-80 line of personal computers. The second generation of microcomputer systems had begun--the era of the personal computer. (Baker, 1982, p. 18)

Microcomputers were first used in the schools by the late 1970s, and educators were concerned with acquiring hardware. The focus of the computer curriculum was on developing computer literacy and programming skills (Caissy, 1987). Between Spring 1983 and Spring 1985 in U.S. elementary and secondary schools, the number of computers in use quadrupled from about 250,000 to over one million. Three-quarters of the schools which had not previously used computers began to do so. The proportion of elementary schools with five or more computers jumped from 7 percent to 54 percent. During the 1984-1985 school year, approximately 15 million students and 500,000 teachers used computers as part of their schools' instructional programs (Becker, 1986).

The Commission on Excellence in the report, A Nation at Risk (1983), identified computer competence as a fourth basic skill. Three years later, the Nation's Report Card, the National Assessment of Education Progress (NAEP), conducted the first nationwide survey of

computer competence. Part of this assessment indicated that computers are seldom used in subject areas such as reading, mathematics, or science. Computers are used almost exclusively to teach about computers (Martinex, 1988). Computer literacy is something schools must begin to provide. One understands best by doing; therefore, schools must not only teach about computers, they must teach with computers and allow the student to use them as personal learning tools like textbooks, notebooks, and libraries (Stephenson, 1985).

The ways students use computers differ sharply by grade level. More than half of student use of computers in elementary schools involves using "drill-and-practice" and "tutorial" programs or computer-assisted instruction. Across all school levels, about one-third of student instructional time on school computers is for computer-assisted instruction, one-third for programming, and one-third is for all other academic work, including "discovery learning" and word processing. Mathematics and language arts (English and reading) are the major subjects for which computers are used in elementary schools (Becker, 1986). Focus also is on improving student achievement in basic skills. Software intended for other subjects or uses can be adapted for reading-instruction applications.

Contrary to what some individuals may believe, computer-assisted instruction in reading is not a new technology. One of the earliest attempts to use computers to teach reading was the Stanford Projects (Fletcher, 1979). These efforts, like many CAI projects of the 1960s, were plagued by several shortcomings. It was expensive to connect terminals via telephone lines to large mainframe computers, the computers were relatively slow by today's standards, software material was primarily text oriented, and

many of the computers were unreliable (Wagner, 1983). Suppes (1971) believes mastery of basic skills is the prime function of computers. Albrecht (1973) believes computers should be learning devices and not drill masters. Suppes (1971) projected that, by 1980, about 15% of the students in the United States, on all grade levels, would be in daily contact with a computer for some aspect of their instruction, especially in elementary reading and mathematics.

Computers are more important when they add something to education that is not readily achieved without them. Immediate feedback, attentional focus, diagnosis, and the potential for a wide variety of laboratory or discovery environments are among the most important values the computer can add (Lesgold, 1985). Substantial tutoring and coaching will be possible. In addition, realistic simulations will be the basis for exploratory microworlds in which children can experiment with ideas, perhaps getting occasional advice from a coach. Researcher John Henry Martin (1981), working with IBM, has followed kindergarten students who were taught to use computers as a way to learn both reading and writing. He spent a great deal of time thinking about how children did and did not learn to read and sought ways to bring the power of technology to bear on the portions of the learning process which did not go well. This approach is one of the first computer-based programs to present an integrated approach to the teaching of reading (Clouse, 1982).

Developed by Dr. John Henry Martin, IBM's Writing to Read program is designed to help teach kindergarteners and first graders how to write anything they can say and read anything they can write. In the Writing to Read Center, students use a variety of equipment and language arts materials organized as learning stations. The teacher is the

educational manager and monitors how each student's needs are being served.

Multisensory, self-paced, and interactive, Writing to Read first used an IBM PC, Jr., equipped with a digitized-voice attachment card which enables the computer to introduce the individual phonemic sounds of the alphabet. The program builds on students' natural language development and provides a logical, sequential and consistent format which allows students to turn their spoken language into words they can read. The five learning stations are the Computer station, the Work Journal station, the Writing/Typing station, the Listening Library station, and the Make Words station.

At each learning station, students work with instructional tools and practice certain skills. Usually one hour a day is spent at the stations where students see, hear, say, and type all the words and sounds. Students adjust well to the centers and are usually able to move in an organized manner from station to station after the first week.

The purpose of Writing to Read is to teach children to read through their own writing. It has language experience as its basis. Children are taught to write it the way it sounds in order to avoid the confusion of the English spelling system when beginning to grapple with the complexities of writing and reading. Children are taught the 42 phonemes of English speech so they can write anything they can say and then read anything they have written. Through this process children will come to understand the logic behind an alphabetic system, which becomes the springboard for future language growth. It then becomes an easier task to begin to read what others have written in books and all printed material.

The Educational Testing Service (1984) did an extensive two-year evaluation of the Writing to Read program and found it to be an effective educational program. They concluded the following: (1) Writing to Read works; (2) children learn with Writing to Read; (3) children in Writing to Read write better than comparison groups; (4) in reading, kindergarten Writing to Read students have a significant advantage over comparison students and, in grade 1, Writing to Read students compare favorably with other students; (5) Writing to Read students perform as well as other students in spelling; (6) teachers respond favorably to Writing to Read; and (7) parents respond positively to Writing to Read (pp. 1-4).

The results from school districts reported improved results over traditional methods, ranging from somewhat better to dramatically better. The results for reading showed that the Writing to Read classes came out as well as traditional classes and, in most cases, better. The program was successful with first grades but even more so with kindergarteners. Data showed that Writing to Read was effective with both boys and girls and with both advantaged and disadvantaged children, helping to close the gap between these groups.

Microcomputers do possess several apparent advantages for teachers, such as being able to assign to students independent work or tailor-made lessons, infinite patience, being able to provide immediate feedback to the user, and having the capability to store test results, thereby providing information to the teacher which can result in more personalized instruction (Rude, 1986). Student motivation, enthusiasm, cooperation, independence, opportunities for high-ability students in programming activities and in other higher order thinking and writing skills, and opportunities for low-ability students to master basic math and language

arts skills were benefits listed by teachers in Becker's survey (1986). Suppes (1965) believes that computer technology provides the only serious hope for the accommodation of individual differences in subject-matter learning. It can relieve the teachers of routine record-keeping, thus allowing them to attend to the more important tasks of trouble-shooritn and instructing children who need individual attention. Computers offer the chance to gather adequate amounts of research data under uniform conditions. The main problems encountered and envisaged are machine reliability, stimulus deprivation, costs of equipment, difficulty in communicating appropriate audio messages to the pupils, and, ultimately, the temptation to settle for less than the best curriculumb ecause of programming problems (Suppes, 1965).

Historically, reading instruction has been the focus of virtually every new technology available in education (Strickland, Felley, & Wepner, 1987). The use of computer technology is no exception. C. B. Smith (1985) reports that "Reading holds the number two position below math for the heaviest use of microcomputers in the elementary grades in U.S. schools. Usage patterns are limited at present, but a wide array of thinking and comprehension activities are beginning to appear" (p. 11). Our work in schools not only confirms Smith's observations but suggests that the use of computers in reading instruction is becoming less and less limited. Microcomputers offer a golden opportunity to encourage both reading and thinking skills and, at the same time, to make children literate beginning in kindergarten (Searfoss & Readence, 1985).

Baird feels that microcomputers can serve many functions in the teaching of reading at the elementary school level. He contends that they are especially valuable to students in upper elementary grades who are not

good readers. Such students may view books as symbols of their earliest failures and will make better progress in their reading if they deal with print in contexts other than the book.

Chrosniak and McConkie (1985) have conducted pilot studies with elementary students who read below grade level and have devised a computer-assisted reading (CAR) program. Their program presents a text on the screen which students read. The students have light pens; and, whenever they come to an unfamiliar word, it is touched with the pen which intensifies it on the screen so the reader's attention is drawn to it. They speculate that, if the computer were programmed to give the same assistance a parent might give, beginning readers would more readily develop better reading habits and an increased enthusiasm for reading. The students' reading speed would increase, and their comprehension would, also.

These researchers found that even students who had to use their light pens extensively for help understood the passages they were reading. The final sessions clearly demonstrated a change in reading fluency, a familiarity with words, and an increase in sight vocabularies. Comprehension of the materials they read increased substantially.

Storytelling has long been recognized as a fundamental part of reading instruction in the early elementary grades. The microcomputer permits teachers to type the stories students tell into the computer and then make printouts. Advantages will be that the story is in the dialect of the students and at their own reading level. Students can then revise, expand, and make these stories more effective.

In 1981, Gleason summarized the effects of computer-assisted instruction as follows:

1. CAI can be used successfully to assist learners in attaining specified instructional objectives,
2. there is substantial savings (20%-40%) in time required for learning over traditional instruction,
3. retention is at least as good as, if not superior to, retention following conventional instruction, and
4. students react positively to good CAI programs, and they reject poor ones.

Blanchard, Mason, and Daniel (1987) believe that diverse computer applications in education and reading continue to grow. They strongly agree that the potential advantages of this tool seem to outweigh the potential disadvantages. The many applications to testing, information and instruction management, drill and practice activities, tutorial/dialogue activities, simulations, telecommunications/information retrieval, word processing, utilities, interactive fiction, videodisks/compact disks, speech, and problem solving are constantly increasing the usefulness of the tool. They list the following advantages:

1. unlimited patience,
2. unlimited ability to store and recall test results and interpretations,
3. limited examiner bias,
4. limited response bias,
5. limited assessment demands on professionals,
6. unlimited use of paraprofessionals in assessment,
7. unlimited use of peripheral assessment devices,
8. unlimited adaptability,
9. unlimited use of assessment procedures in research, and

10. unlimited use of graphics for assessment. (pp. 71-72)

Disadvantages of microcomputers are: dehumanization and depersonalization, costs of hardware, computer literacy requirements, mechanical failures, limited research, confidentiality, resistance by professional and others, and limited decision-making features. Mason (1987) lists the following additional disadvantages: the cost of software, the difficulty of reading at a cathode ray tube, the computer's inability to listen to someone read in order to help improve fluency, and the fact that the computer is limited to the responses which are programmed. Many of these problems have been addressed and at least partly resolved; others will await new technological developments.

In the future, there will be a new definition of literacy. Being an educated person will involve knowing how to interact with computers. It will probably become impossible to complete school without being able to deal with computers at some level. Most students will learn how to interact with a computer as a basic skill (Reinking, 1987). Given an awareness of the issues, teachers can make informed choices concerning technology and how it can be applied to language arts instruction. As Schon (1983) contended, teachers need to become reflective practitioners.

One computer reading program which is widely used is the Apple Learning Series: Early Language. It provides a flexible, multi-sensory approach to learning the essential skills of reading, writing, speaking, and listening. Designed to complement existing language arts curricula, Early Language can be used with any school's basal textbook and can be easily integrated into any teacher's instructional style and classroom environment.

The Early Language software provides a wide variety of exciting learning activities designed to enable all students, gifted, remedial, and average, to use their senses to master the full range of communication skills. Because individual children have different learning styles, some learn better through visual experiences, some through listening, and others by manipulating materials. The series is also suited for use in the special education environment. The various input devices and sensory activities offer alternative ways of learning, and it's ideal for motivating slower students because the computer is never impatient or judgmental. It provides a foundation for future expansion, a basic setup, to which teachers can add more software and hardware.

Apple Learning Series: Early Language includes the following components: software (Muppets on State, Muppet Word Book, Muppetville, Sound Ideas, Touch 'N Write, Talking Text Writer); peripherals (Muppet Learning Keys, Echo and Echo Speech Synthesizer, Touch Window); and teacher support (manuals).

At the Skill Station, children learn fundamental language skills: how to recognize letters, distinguish between upper- and lowercase letters, identify initial consonant sounds, and rhyme words. The Sound Station provides phonetic instruction in basic reading and writing skills, including recognition of consonant and vowel sounds, letter combinations, and sounds within the context of words. The Writing Station helps bring the world of words to life. It allows students to use a talking word processor to produce words and sentences. The station also reinforces handwriting skills, including correct letter formation for most methods of penmanship. This comprehensive program covers all K-2 language arts areas and offers learners one-on-one interaction with the learning materials. It provides

immediate feedback, branches to the appropriate skill level, permits students to work at their own rate of learning, encourages creativity, and offers a multisensory approach to learning activities.

Huff (1989) made a comparison of thirteen students between March and May who were instructed three times a week in the Early Learning Series. The results showed that a change occurred in all subtests from March to May and that the May scores were significantly higher than the March scores. Other factors, such as age and instruction in other classes, had a bearing on this change. However, it is reasonable to assume that the Apple Early Learning instruction contributed to the higher May scores. Subjective reports indicated that the teachers involved felt the students who were slower learners advanced a great deal, and those who were quick learners advanced somewhat also. Teacher attitude was positive toward the project and probably contributed to the motivating attributes of the instruction. Students involved reported that they liked the program, thought it was fun, and would like to use the computers and software every day.

Conclusion

Society places a high priority on literacy. Reading instruction in elementary and secondary schools has undergone many changes throughout the years. Many of these changes have resulted in gains in reading achievement. Despite these gains, schools are constantly searching for innovative approaches and programs which will reach all students. This is necessary since some students are still functionally illiterate at time of high school graduation. The schools' goal is for the improvement of reading in all children.

The Basal Reading Approach continues to be used by the majority of teachers in elementary schools. The scope and sequence and ease in preparation and training are the key factors. Many administrators prefer teachers to use these materials as they give security and direction to the reading program. Studies referred to in this paper have shown that students in classes which incorporated various components of other approaches into the basal reader programs scored much higher in achievement than students in schools having only the basal reader.

The Language Experience Approach recognizes oral language, speaking, thinking, listening, writing and reading, and what students think and say they can write and read in meaningful ways. It capitalizes on students' experiences and vocabulary which later are transformed into the reading material. Students are personally involved with the text and are motivated to want to read. These experiences encourage acquisition of a reading vocabulary as well as a comprehension of the printed word. Students taught by this approach have a positive attitude and greater language and achievement gains. Language experience is very effective for reading disabled students and promotes a good self-concept within students. It is successful as a remedial technique in the upper grades.

Whole language is based on the total language experience of the child. Children learn language b y using it, writing it, thinking it, and reading it. Both oral and written language are integrated and become whole word language experiences. Many kinds of printed materials are utilized to integrate oral and written language.

Student use of computers in elementary school involves drill-and-practice, tutorial, computer-assisted instruction, discovery learning, and word processing. The most important values the computer can add are

immediate feedback, attentional focus, diagnosis, and a wide variety of laboratory or discovery environments. Two of the most used kindergarten and first grade reading computer programs are the IBM Writing to Read and the Apple Early Learning Series. Children learn to read and write with computer assistance, and results compare favorably and sometimes above average with other reading methods.

A sound educational program is built on knowing and working with students' strengths and weaknesses. The same premise applies to the reading program. In order to upgrade a reading program, two things must happen: (1) existing strengths must be identified and built upon, and (2) weaknesses must be pinpointed and corrected. The best treatment is excellent instruction, which in turn seems to heighten interest and hope as well as improve reading skills and uses of reading.

The recently published report of the U.S. Commission on Reading (Anderson et al., 1985) provides a compelling argument for major changes in the way schools teach reading. The report challenges many traditional practices and materials, such as ability grouping, basal readers, and implicit phonics instruction. Many pages are devoted to a discussion of basal materials and their use. However, at times the Committee seems to apologize for this attention: "In most classrooms, the instruction will be driven by a basal reading program. For this reason, the importance of these programs cannot be underestimated and will be briefly discussed here" (p. 34). The implication is that the Committee only discusses basals because teachers rely on them; yet, their firm commitment to these materials is found in their discussion of "Whole Language" approaches to teaching reading. First, they acknowledge that these methods have been used successfully in New Zealand, "the most literate country in the world",

and that "in the hands of very skillful [American] teachers, the results can be excellent" (p. 45). Studies of Whole Language Approaches in the United States have produced results that are best characterized as inconsistent (Anderson et al., 1985).

Anderson et al. (1985) argue, by citing Bond and Dykstra's (1967) First Grade Studies as evidence, "the average results of the whole language approach are indifferent when compared to approaches typical in American classrooms" (p. 45). The Commission seems to leave unexamined the reasons why whole language as an alternative to basal materials has been successful in New Zealand or why New Zealand teachers seem to be very skillful in comparison to average American teachers. The fact still remains that many of those who appear to be calling for change in basals have their names on basals as authors (Goodman et al., 1987).

One conclusion of the largest research project in reading methods, the National First Grade Studies of the U.S. Office of Education (Dykstra, 1967) is, "No one approach is so distinctly better in all situations and respects than the others that it should be considered the one best method and the one to be used exclusively" (p. 122). Combination programs should be utilized to increase reading achievement; however, Basal Reading series still remain the most widely used in the elementary schools across our country. In many schools, attention is now being given to other meaning-based programs such as individualized reading, whole language, language experience, and computer-assisted instruction. Since there is no single method which seems appropriate for all children, it is recommended by this researcher that a combination of these approaches be used within the classrooms to teach reading. Components of language experience, whole

language, and computer-assisted instruction need to be incorporated into the core basal program to make reading meaningful and enjoyed by all students.

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